

CLAIMS

What is claimed is:

1. A method of analyzing the effects of a high frequency transmission system comprising:

modeling a high frequency signal source as an ideal voltage source and a resistance and capacitance circuit;

5 modeling bond wire connections within said transmission system using an equivalent resistance, capacitance and inductance circuit;

modeling an integrated-circuit package in said transmission system using an equivalent resistance, capacitance and inductance circuit;

10 modeling a package stub in said transmission system as an unterminated transmission line; and,

selecting a package trace such that the length of said package stub is sufficiently short so that transmission line effects of said package stub occur at a frequency higher than the highest-expected frequency used by said package trace.

2. The method of claim 1 further comprising:

modeling a trace wire of a printed circuit board in said transmission system using an equivalent resistance, capacitance and inductance circuit;

3. The method of claim 2 further comprising:

modeling a printed circuit board stub as an unterminated transmission line; and

5 selecting a printed circuit board trace such that the length of said printed circuit board stub is sufficiently short so that transmission line effects of said package stub occur at a frequency higher than the highest expected frequency of a signal applied to said trace wire.

4. A device that minimizes transmission line effects of high frequency electrical signals in an integrated-circuit transmission system made by a process comprising:

modeling a high frequency signal source as an ideal voltage source;
modeling bond wire connections within said integrated-circuit
5 transmission system using an equivalent resistance, capacitance and inductance
circuit;

modeling an integrated-circuit package using an equivalent resistance,
capacitance and inductance circuit;

modeling trace wire connections between a printed circuit board and said
10 integrated-circuit package using an equivalent resistance, capacitance
and inductance circuit;

modeling a package stub within said integrated-circuit package, which acts
as an unterminated transmission line between a package connector pad and an
edge of said integrated-circuit package; and,

15 selecting a length of said package stub so that any transmission line effects
along said package stub occur at a frequency higher than the highest-expected
frequency used by said integrated-circuit package.

5. The device of claim 4 further comprising:

modeling trace wires of a printed circuit board in said transmission system
using an equivalent resistance, capacitance and inductance circuit.

6. The device of claim 5 further comprising:

modeling a printed circuit board stub as an unterminated transmission line;
and,

5 selecting a printed circuit board trace such that the length of said printed
circuit board stub is sufficiently short so that transmission line effects of said
package stub occur at a frequency higher than the highest expected frequency of a
signal applied to said trace wire.